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New Plants from North Dakota.—XI.

BY J. LUNELL.

Antennaria angustiarum sp. nov.

Planta in coloniis parvis, marium et feminarum in vicem vicinis, genita. Stolones longitudinem caulis dimidiam obtinentes. Plantae stamineae et pistillatae longitudine aequales, 10–12 cm. altae, femineae lente aliquantulum elongatae. Caulis infimus foliis 4–7 lanceolatis, superiorum proximis minoribus verticillatim cinctus. Folia basilaria tomento laneo subtili, remisso et radendo facile amoto, post pluvias fere pellucido et sub lente tantum percepto, superne vestita. Simul folia stolonum radicanthum tomento aequè appresso-sericeo, per annum primum manente, gaudent. Folia basilaria 2–3 cm. longa, 8–12 mm. lata, late oblanceolata vel elliptica, basi cuneata, petiolo alato sensim angustato, textura tenui sed firma. Mas capitula pauca, plerumque 3–4, dense congesta habet, femina capitula 2–5, primum cummulata, postea corymbosa, pedicellis longitudine varia brevibus ornata. Involucra 8 mm. alta. Bracteae maris albae, latae, obtusae, integrae, feminae albae, externis macula fusca addita, angustae, acutae, integrae.

Plant growing in small colonies, males and females near each other. Stolons about one-half the length of the stem. Mature staminate and pistillate plants of equal length, 10–12 cm. high, the pistillate becoming somewhat longer in the late fruiting stage. The lowest end of the stem encircled by a rosette of 4–7 lanceolate leaves, smaller than the leaves next above them on the stem. Primary basal leaves carry on the upper side a thin, woolly tomentum, loose and easily removed by scratching, after rains looking almost transparent, and then almost needing the lens to become visible. At the same time the leaves on the rooting stolons have an equally appressed silky tomentum which they retain during the whole first season. Basal leaves 2–3 cm. long, 8–12 mm. wide, broadly oblanceolate or elliptic, with a cuneate base gradually narrowed into the winged petiole, their texture being thin, but firm. The male plant has a dense cluster of few, generally 3 or 4 heads, the female plant has 2–5 heads, at first clustered, later corymbose with short pedicels of variable length. Involucres 8

mm. high. Male bracts white, broad, obtuse, entire. Female bracts white, the outer with a brown spot, narrow, acute, entire.

This species is easily differentiated from its allies by the characteristic outline as well as pubescence of its leaves, and by its tall, few-headed staminate plants. Its home is the high, rolling prairie, and it was collected by the writer in a grassy cut, on both sides lined in profusion with *Eleagnus argentea*, 3 or 4 feet high, on the upper middle plateau of Butte, Benson County, the type specimen dated June 1, 1913.

Chamaesyce glyptosperma var. **integrata** var. nov.

Marginibus foliorum integris.

Plant with entire leaf margins.

Collected at Leeds, Benson County, by the writer, on Aug. 20, 1906.

Amarella theiantha var. **lactea** var. nov.

Corolla albido-flavescens.

Corolla ochroleucous. In the type the color of the tube in a bright sulphur-yellow, and of the lobes white.

In low gravelly prairie, at Towner, McHenry County.

Amarella theiantha var. **livida** var. nov.

Lobi corollae obscure lividi.

Corolla lobes of a dull bluish color.

On the lower end of hillsides, occasionally at Butte, Benson County.

Epilobium adenocaulon var. **pseudocoloratum** var. nov.

Caulis in aestate posteriore suboles basiales subsessiles evolvens; folia ampla, membranacea, lanceolata, serrulata, conspicue petiolata; petioli alati.

Stem developing subsessile basal rosettes during the latter half of the summer; leaves large, membranous, lanceolate, serrulate, distinctly perioled; petiole winged.

In a cold bog along a rill in the woodland encircling Pleasant Lake, Benson County, August 14, 1911.

Cirsium nebraskense var. **formidosum** var. nov.

Spinae foliorum 7 mm. longae et lobi profundi.

Leaf spines 7 mm. long, even stouter than the spines of *C. ochrocentrum*. Leaves as in var. *discisum*, which is the prevalent

form and has weak spines of variable length (2-5 mm.). The type is in my herbarium and identical with No. 49, Fasc. V. of Petrak's *Cirsiotheca Universa*, where it has been introduced under the name of *Cirsium Flodmannii* Petrak. It was collected by J. C. Blumer near Minot, Ward County: "America borealis," North Dakota, in pratis siccis, arenosis prope pagum "Minot," 9-12. IX. 1911.

***Erigeron asper* var. *subinteger* var. nov.**

Quaedam folia denticulata.

Some leaves denticulate.

Sparingly on prairies at Kulm, La Moure County, where it was collected by Dr. J. F. Brenckle on May 15, 1912.

***Grindelia squarrosa* var. *quasiperennis* var. nov.**

Folia denticulata, basin versus angustata.

Leaves denticulate, narrowed toward the base.

Occasionally found within Benson County, in barren, alkaline soil.

***Amelanchier macrocarpa* sp. nov.**

Arbustum 0.5-2 m. altum. Folia recentiora tomento pallido, flavido-albo, mox calvescente dense operta, surculi autem recentes, pedunculi, pedicelli, petioli, nervi mediani foliorum laminae inferioris tardissime detersi. Folia suborbiculari-oblonga, basi rotunda vel subcordata vel raro acutula, apice rotundato vel retuso vel mucronato, recentia in longitudinem plicata, 2-6 cm. longa, 1.5-4.5 cm. lata, vetustiora firmissima, candide et saturate viridia, vehementer venosa, praecipue in marginis partibus duobus e tribus inaequaliter serrato-dentata, dentibus apice callosis, alia autem folia dentibus paucis minimis aliaque marginibus integris vestita. Petala circiter 8 mm. longa, obovata. Pedicelli fructiferi 3-10 mm. longi. Pomum succulentum, dulce, atrum vel atropurpureum, 10 mm. diametro, ab Idibus Juniis per mensem Julium maturum. Flores de Aprili ulteriore ad Junium priorem apparent.

Shrubs 0.5-2 m. high. The young leaves densely covered with a pale yellowish-white tomentum, soon becoming glabrate, but the young twigs, peduncles, pedicels, petioles and median nerves of the leaves on the lower side clearing off very late. Leaves suborbicular-oblong, with rounded or subcordate or rarely acutish base, and with rounded or retuse or mucronate apex, folded length-

wise when young, 2-6 cm. long, 1.5-4.5 cm. broad (comparatively broader than in *A. oblongifolia*), older of very firm texture, bright- and deep-green, strongly veined, irregularly serrate-dentate, especially on the upper two-thirds of their margins, with small callous-tipped teeth, but other leaves have only a few, very small teeth, and still others have even entire margins. Petals about 8 mm. long, obovate. Fruiting pedicels 3-10 mm. long. Pome juicy, sweet, black or black-purple, 10 mm. in diameter, ripe during the latter part of June-July, while the species is flowering from the last part of April until the first part of June. It reaches its largest size in moist woods, and is comparatively small in rocky uplands. Besides being planted for its ornamental effect in lawns, this shrub is highly valued for culinary purposes on account of its large, delicious pomes. To the laity, however, the size does not entitle them to such a dignified rank, but simply reduces them to "berries," as a pome is expected to have at least the size of a crabapple.

Usually distributed as *A. alnifolia* Nutt., but this shrub has leaves glaucous and coarsely crenately serrate-dentate above the middle, entire below the middle, and coming nearer to the orbicular outline than ours; the pomes are purple with bloom, 6-8 mm. in diameter. It grows on banks of streams. Our species is nearest related to *A. oblongifolia* (T. & G.) Roem., but this shrub has leaves oblong, 4-6 cm. long, 1.5-2.8 cm. broad (thus narrower than ours), finely and evenly serrate, light-green, and its pome is smaller, 6 mm. in diameter, and crimson or purplish.

The type was collected by the writer at Pleasant Lake, Benson County, on May 21, 1912 and July 28, 1911.

***Rhus angustiarum* sp. nov.**

Caudex subterraneus ramos caudicibus similes sursum versus emittens, anno 1: mo pedales, 2: do 3-pedales, 3:o 5-pedales, 4: to 7-pedales. Pars tota lignea nuda, gemmis lucidis succulentis in locos foliorum priorum substitutis, fusca, lepticellata. Apices herbacei tempestivi er petioli tegmento glauce scente purpureo-maculoso primitus vestiti, tarde obscure spadices, glutinosi. Folia 15-30 cm. longa, valde conferta. Foliola 13-17, interdum 19, mensura et forma admodum variabilia, 3-9 cm. longa, oblongo-lanceolata, apice acuminato vel acuto, basi rotundata, foliola foliorum superiorum ramorum frugiferorum panee sessilia, foliorum

autem inferiorum et omnia ramorum steriliū petiolos conspicuos usque 4 mm. longos vel breviores gerentia, serraturae aequales vel inaequales, utrinque 3-18, neque profundae neque acres, facies superior obscure viridis, nitida, matura siccata lucide viridis, inferior folioli recentis lucide viridis, maturantis pallide glauca, maturi insigniter dealbata. Panicula et florens et frugifera pyramidalis, densa, in saltibus minor (3-9 cm. alta), in campis apertis maior (7-15 cm. alta). Fructus complanati, ambitu paene orbiculares, apice brevi, immaturi succulenti, maturi sicci, 4 mm. alti.

Stem subterranean, sending forth stem-like branches upwards, these being one foot high in the first year, 3 feet in the second year, 5 feet in the third year, and 7 feet in the fourth year, which is the maximum height seen by the writer. The wooden part nude throughout, with scattered, light, juicy buds on the sites of former leaves, brown, lenticellate. The young herbaceous tops and the petioles with a purple-spotted glaucescent bloom early in the season, later dark chestnut-colored, glutinous. Leaves 15-30 cm. long, very crowded. Leaflets 13-17, sometimes 19, very variable in size and outline, 3-9 cm. long, oblong-lanceolate, with acuminate or acutish apex and rounded base, the leaflets of the upper leaves on the fruiting twigs almost sessile, but those on the lower leaves and all on the sterile twigs very plainly petiolulate with even to 4 mm. long petiolules, serratures even or uneven, 3-18 on a side, not very deep or sharp, upper face dark green, shining, at maturity becoming lightish green in drying, lower face in youngest leaflets light-green, in somewhat older ones pale-glaucous, at maturity remarkably whitened. Panicle pyramidal in flower; also in fruit, being smaller in the woodland (3-9 cm. high), larger on the open prairie (7-15 cm. high), compact. Drupelets flattened, circumference almost orbicular, with a short tip, unripe juicy, ripe dry, 4 mm. high.

In order to differentiate this species from related ones, suffice it to state, that *R. cismontana* Greene has leaflets 11-13, light-green above, 4-6 cm. long, subsessile, serratures 10-12 on each side, and panicle narrowly pyramidal; and that *R. sambucina* Greene has leaflets 11-13, light-green above, 7-10 cm. long, subpetiolulate, serratures 11-12 on each side, and panicle oval, lax.

From the state of Minnesota with its abundance of *R. glabra* segregates this group of shrubs is said to have established itself on the western border of the Red River of the North, but the

writer has not seen any representatives of these allies, which are probably *R. petiolata* Greene or other Minnesota natives. The species here described belongs to central North Dakota, and its only known habitation is 90 miles west of the Red River on the banks of Devil's Lake, where the water basin is narrowed to a channel across which a railroad bridge and a public road have been built. For this reason the place has received its name, Narrows, and hence also is derived the species name of the plant. It was collected by the writer on June 26, 1913, and on August 12 of the same year, at which later date the leaves had already commenced to attire themselves in their gorgeous, scarlet, autumnal garb.

***Dodecatheon thornense* sp. nov.**

Caudex perennis, parvus, radiculis fibrosis validis adiunctis. Scapus erectus, procerus, artus, gracilis, interdum autem robustus, 2-6 dm. altus, fistulosus. Folia longitudinis scapi partem quintam usque tertiam attingentia, suberecta, anguste usque late lanceolata, in petiolum longum alatum attenuata, nonnihil succulenta, siccata membranacea, glabra, integra, apice obtusissimo, 10-15 cm. longa, 1.5-3 cm. lata. Bractee late ovatae, acutae. Calyx ad pedicellum versus sensim reductus, lobi triangulari-lanceolati. Umbella floribus 10-15 plerumque vestita. Pedicelli longitudine variabili, in flore recurvati, in fructu erecti. Deest in typo corolla. Capsula crustacea, subcylindrica, acuta, valvis 5 brevibus apice aperta, 0.7-1.2 cm. longa.

Rootstock perennial, being a small corm with strong fibrous roots attached. Scape erect, tall, narrow and slender, though in some plants quite robust, 2-6 dm. high, hollow. Leaves one-fifth-one-third of the length of the scape, suberect, narrowly—broadly lanceolate, tapering into a long, margined petiole, somewhat fleshy, after drying membranous, glabrous, entire, very obtuse at the apex, 10-15 cm. long, 1.5-3 cm. wide. Bracts broadly ovate, acute. Calyx tapering into the pedicel, lobes triangular-lanceolate. Umbel usually 10-15 flowered. Pedicels of variable length, recurved in flower, erect in fruit. Corolla not seen for the type locality, but will be described in this journal during the next season. Capsule crustaceous, subcylindrical, pointed, opening through 5 short apical valves, 0.7-1.2 cm. long.

This species is plainly distinct from its nearest relative *D. pauciflorum* Greene (a plant distributed from Montana to the

Pacific coast), having leaves much smaller in proportion and of a peculiar cut, narrow, very obtuse, with a leaning to spatulate.

In the year of 1889, month of June, the writer found at Willow City, Bottineau County, a flowering *Dodecatheon* of small size (about 2 dm. high), the growth probably inhibited in part by the extreme drought of the entire season. It is lamentable that the specimen was lost, especially on account of the impossibility to find another one of its kind before the present year, 24 years intervening. It had been found, I believe 10 years ago, at Laureat, Rolette County, by Miss Lela Lovell, now of Minneapolis, and at Thorne, in the same county at a distance of only a few miles from Laureat, four years ago by Prof. C. B. Waldron of the North Dakota Agricultural College, and, thanks to the detailed notes I received from him, I succeeded in securing the fruiting plant on the 11th of July last in the locality where it was discovered by him. I hardly need to add that the species has been named from its habitat. The plant produces an abundance of seeds, and it would unquestionably be well established in moderately moist meadows. But I could not find it where cattle was grazing, and the forbidden spots are scarce. It is therefore no wonder that this species has apparently a desperate struggle for its existence.

Leeds, North Dakota.

Another *Rhus glabra* Segregate from Nebraska.

BY J. LUNELL.

Rhus Hapemanii sp. nov.

Frutex ramis robustis, striatis, pullis, nitidis, lenticellatis ornatus; frondes amplae et laxae, petiolus et rachis conjuncti 3 dm. longi; foliola 11-17, spatio unciali remota, magnopere petiolulata, acuminata, 9-11 cm. longa, 3-3.5 cm. lata, oblongo-lanceolata, admodum serrata, singulis marginibus circiter 15 serraturae inaequales praebentibus, subcoriacea, subfalcata, lamina superiore magnificenter et profunde viridia, inferiore, et praesertim in speciminibus maturis, vix glaucescentia; paniculae floriferae late pyramidales, 2 dm. altae, basi latissimae; paniculae fructiferae 2 dm. altae, paulum autem angustiores; rami paniculae tomentu-